



EX PARTE OR LATE FILED

April 2, 1997

Mr. William F. Caton
Secretary
Federal Communications Commission
1919 M Street N.W.
Washington, D.C. 20554

RECEIVED

APR 2 1997

Federal Communications Commission
Office of Secretary

DOCKET FILE COPY ORIGINAL

Re: Ex Parte presentation in WT Docket 96-86

Dear Mr. Caton:

On March 27, 1997, Robert Speidel, Dale Hatfield and Richard Shiben representing Ericsson Inc. met with members of the John Cimko, Chief of the FCC Policy Division and his Staff, David Wye of the Office of the Bureau Chief, and Mark Rubin of the Private Wireless Division.

They discussed the spectrum, interoperability and competition issues related to public safety communications. They also discussed the needs of public safety agencies for additional spectrum.

Sincerely,

Dr. Lars-Goran Larsson

Attachment

No. of Copies rec'd 0
List ABCDE

ERICSSON INC.
Public Affairs
1634 I Street, NW, Suite 600
Washington, D.C. 20006-4083

Telephone

202-783-2200

FAX

202-783-2206

A Review of Public Safety Issues WT Docket No. 96-86

Presentation by
Ericsson Inc.
March 27, 1997

Purpose of Presentation

- Provide the Wireless Telecommunications Bureau staff with background on public safety communications issues as related to WT Docket No. 96-86

Outline

- Introduction
- Public Safety Operational Requirements
- Description of Public Safety Today
 - Bands
 - Technology
 - Market
 - Perceived Deficiencies/Limitations
 - Standard Setting in Public Safety
 - The Public Safety Wireless Advisory Committee (PSWAC)

Outline

- The Notice of Proposed Rulemaking (WT Docket No. 96-86)
 - Overview of the issues
 - Interoperability
 - Operational
 - Technology
 - Spectrum
 - Transition
 - Competition

Outline

- Key Issues
 - Spectrum issues
 - Requirements
 - Efficiency
 - Sources
 - Interoperability issues
 - Competition issues
- Summary
- Summary of Ericsson Recommendations

Introduction - Importance of Public Safety Communications

- Critical to protection of life and property
- Some statistics indicating importance
 - Government spending on public safety related activities (1992)
 - Police protection \$41.2 B
 - Fire protection 4.4 B
 - Corrections 31.0 B

Introduction - Importance of Public Safety Communications

- Some Additional Statistics
 - Losses from crime (1995)
 - Robbery \$.5 B
 - Burglary 3.3 B
 - Larceny-theft 4.3 B
 - Motor vehicle theft 7.6 B
 - Losses from fire (1995)
 - Property damage \$ 8.9 B
 - Loss of life (e.g., 174 police officers and 39 fire fighting personnel suffered fatal injuries in 1995)

Public Safety Operational Requirements

- Command and control system where high degree of coordination among units is required
 - unit-to-unit and unit-to-multiple units
 - dispatcher-to-unit and dispatcher-to-multiple units
- Dispatch orientation and fleet/group call requirement
- Modes -- voice, messaging, data (e.g., mobile data terminals - MDTs), image (e.g., "mug shots"), and video
- Unique requirements in terms of rapid access, high reliability, ubiquitous coverage, and terminal support
- Mission critical versus non-mission critical communications

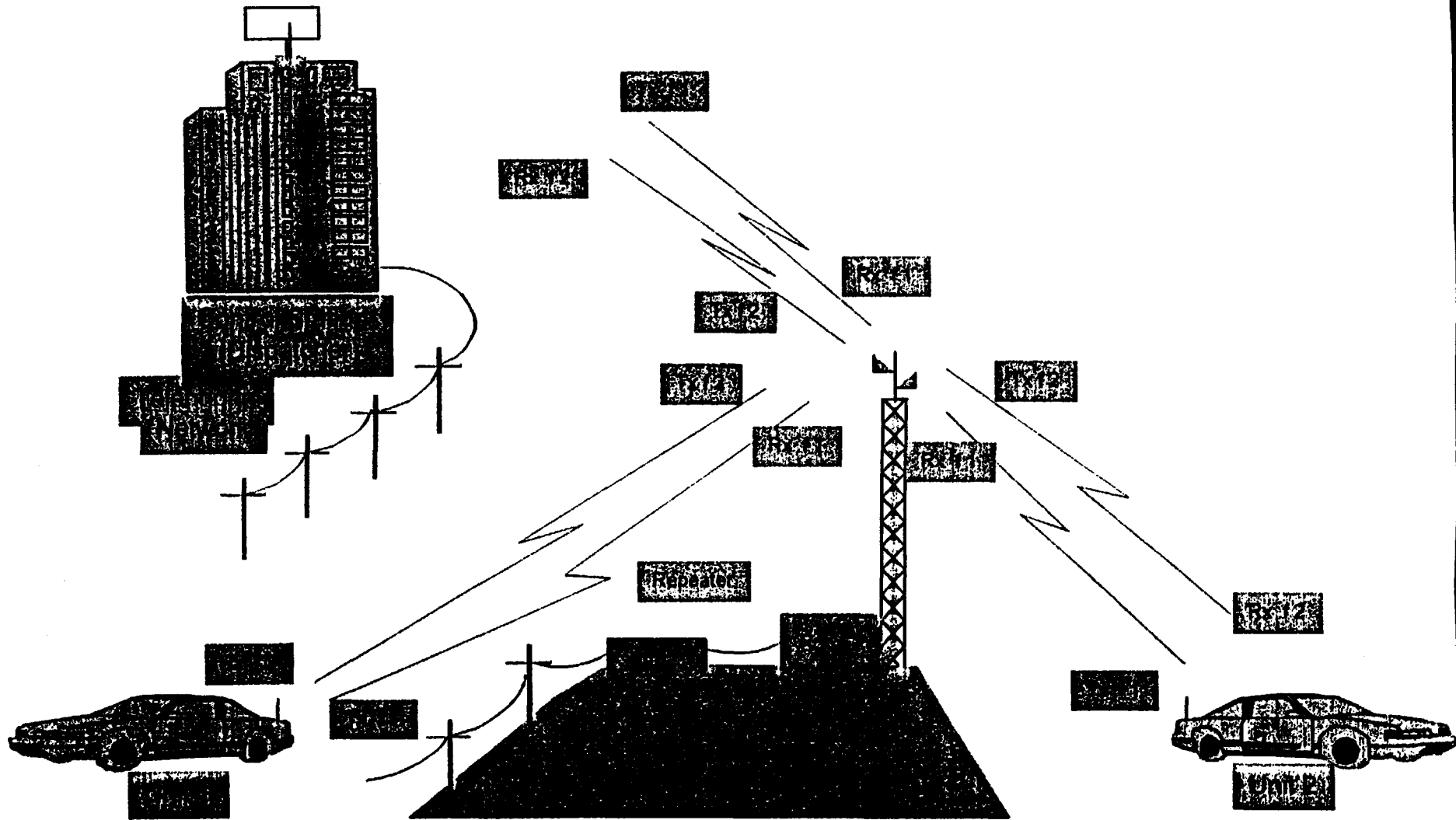
Public Safety Today - Bands

CURRENTLY ALLOCATED PUBLIC SAFETY LAND MOBILE SPECTRUM Non-Federal Government		
Frequency Band (MHz)	Number of Channels	MHz (Approximate)
25-50	315	6.3
150-174	242	3.6
220-222	10	0.1
450-470	74	3.7
806-821/851-866	70	3.5
821-824/866-869	230	6
TOTAL*	941	23.2

*Excludes spectrum in the 470-512 MHz band in 11 markets.

Public Safety Today - Technology

- Repeater System

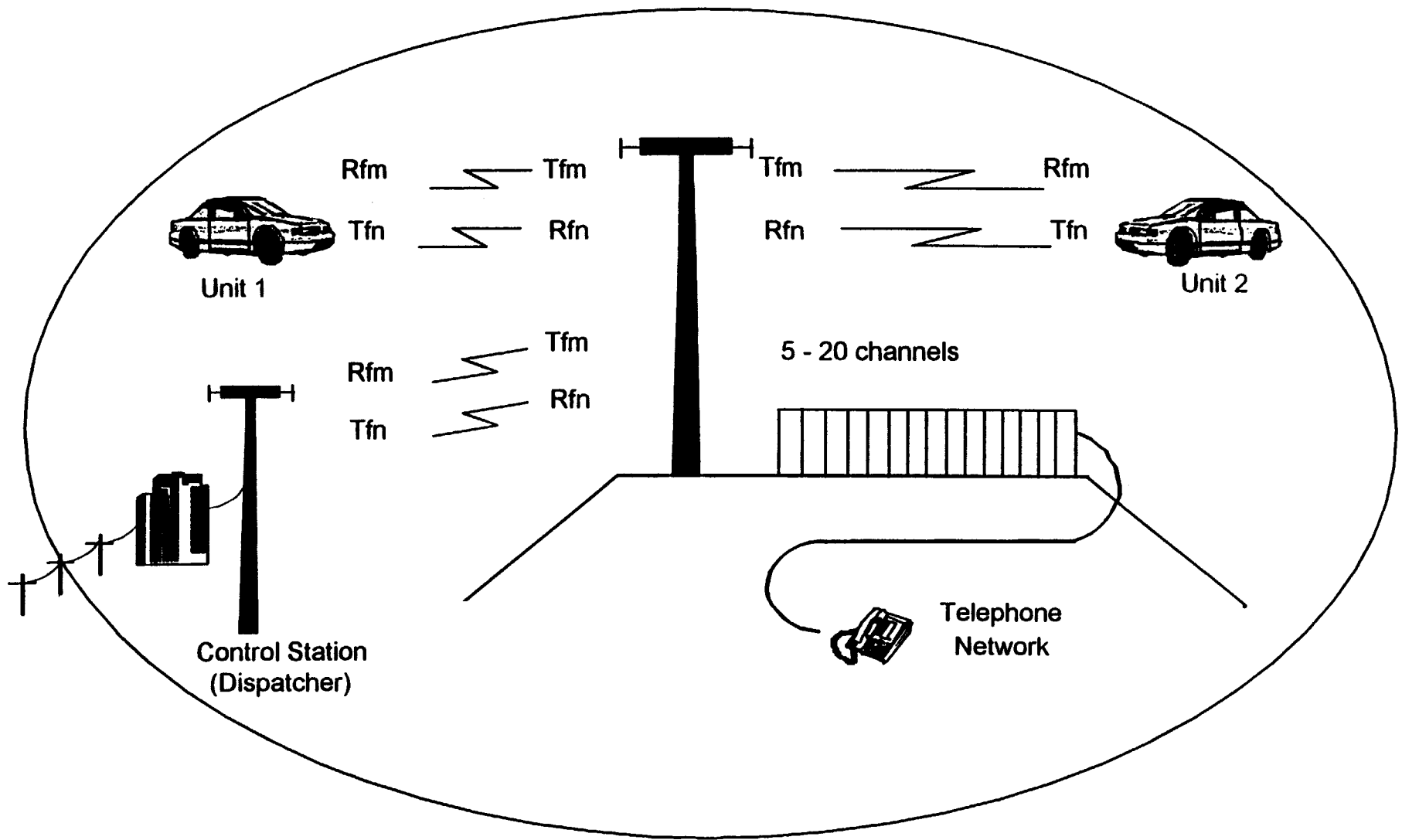


Private Radio Systems
Lynchburg, Virginia

ERICSSON 

Public Safety Today - Technology

- Multichannel Trunked System



Public Safety Today - Technology Trends

- Digital Integrated Circuits/Digital Signal Processing
- Batteries/RF Generating Equipment
- Compression (Source Coding)
- Modulation
- Digital Multiple Access Techniques -- FDMA, TDMA, CDMA
- Error Correction Coding

Public Safety Today - Market

- Total market approximately \$ 1 billion
- Estimated market shares
 - Motorola - 73 %
 - Ericsson - 20 %
 - Other - 7 %
- Herfindahl-Hirschman Index (HHI) greater than 5,700

Public Safety Today - Deficiencies/Limitations

- Problems identified by PSWAC
 - Lack of adequate spectrum
 - Limited interoperability
 - Constraints on implementation of advanced services/features
- Additional problems
 - Inadequate quality of communications
 - Lack of a vigorous competitive market

Standards Setting in Public Safety

- Situation prior to the introduction of trunking
- Organization and Role of the Association of Public Safety Communications Officials (APCO)
- Standards organizations - American National Standards Institute (ANSI) and ANSI accredited organizations

Standards Setting in Public Safety

- APCO Project 16
 - Voluntary functional/performance recommendations for analog trunked radio systems in public service applications
 - Became a *de facto* standard for Public Safety trunked system procurements
 - Resulted in virtual Public Safety monopoly for Motorola for approximately six years because only their proprietary equipment was capable of meeting the functional/performance specifications

Standards Setting in Public Safety

- APCO Project 25
 - Joint effort of APCO, the National Association of State Telecommunications Directors (NASTD), and certain federal agencies
 - Organization of APCO Project 25
 - Project 25 Steering Committee
 - Neither APCO nor the APCO Project Steering Committee are ANSI accredited
 - Role of the Telecommunications Industry Association (TIA) and the APCO 25 Interface Committee (APIC)
 - Complexity and importance of APCO Project 25
 - Controversy surrounding the APCO Project 25

The Public Safety Wireless Advisory Committee (PSWAC)

- Background
 - In response to a Congressional requirement, completion of a report entitled Future Public Safety Telecommunications Requirements and release of an NOI in PR Docket No. 84-232 seeking comments
 - In response to a Congressional requirement, submission of a report entitled Report and Plan, Meeting State and Local Government Public Safety Agency Spectrum Needs Through the Year 2010 on February 9, 1995
 - Following Congressional hearings in March, 1995, creation of the Public Safety Wireless Advisory Committee (PSWAC) on June 25, 1995

PSWAC

- Charter
- Structure of the Committee
 - Steering Committee
 - Subcommittees
 - Operational Requirements Subcommittee
 - Technology Subcommittee
 - Interoperability Subcommittee
 - Spectrum Requirements Subcommittee
 - Transition Subcommittee

PSWAC

- **PSWAC Final Report**
 - Submitted in September 1996
 - Overview of Observations/Recommendations
 - More spectrum is required
 - Improved interoperability is required
 - More flexible licensing policies are desirable
 - More sharing and joint use should be encouraged
 - Use of commercial service and private contracts should be facilitated
 - A continuing consultative process should be established
 - Funding limitations will remain a major obstacle
 - Separate statement of Ericsson Inc.

The NPRM in WT Docket No. 96-86

- Overview of the issues
 - Interoperability
 - Operational
 - Technology
 - Spectrum
 - Transition
 - Competition

The NPRM

- Key issues to be resolved in the rule making
 - Issues related to spectrum
 - Issues related to interoperability
 - Issues related to competition

The NPRM - Spectrum Issues

- **Spectrum requirements**
 - PSWAC recommendations
 - Immediate 2.5 MHz for interoperability, 25 MHz in the short term, up to 70 MHz long term
 - Positions of the parties
 - Support for the approach used to make the forecast
 - Support for conclusions regarding current and future requirements
 - Ericsson recommendations
 - No controversy

NPRM - Spectrum Issues

- **Spectrum efficiency**
 - PSWAC recommendations/assumptions
 - PSWAC methodology -- separation of demand forecasts from spectrum efficiency forecasts
 - Assumes the **average** public safety system in 2010 will carry a voice conversation in 4 kHz of spectrum
 - Positions of the parties
 - Support for the general approach used by PSWAC
 - General agreement over importance of spectrum efficiency and need to create incentives to migrate to spectrum efficient systems